Received: 12 October 2021 | Revised: 28 July 2022 | Accepted: 1 August 2022

DOI: 10.1111/jasp.12920

ORIGINAL ARTICLE

Journal of Applied Social Psychology WILEY

Controllability is key: Goal pursuit during COVID-19 and insights for theories of self-regulation

J. Helgi Clayton McClure | Scott N. Cole

School of Education, Language and Psychology, York St John University, York, UK

Correspondence
J. Helgi Clayton McClure, York St John University, Lord Mayor's Walk, York YO31 7EX, UK.
Email: h.mcclure@yorksj.ac.uk

Abstract

The COVID-19 pandemic has been an unprecedented public health emergency with wide-ranging psychological impacts. The resulting uncertainty surrounding employment, finance, and health could impact how individuals think about and pursue their personal goals. Specifically, we anticipated that pandemic-related goals would be perceived as less controllable, presenting a unique opportunity to test effects of controllability on self-regulation. We elicited spontaneous self-regulatory thought (SRT) data for personal goals related and unrelated to COVID-19, predicting that (A) the relative prevalence of different SRT modes (e.g., dwelling, indulging, mental contrasting) would differ between COVID-related and unrelated goals; and (B) the typical motivational benefit of mental contrasting (i.e., considering a desired outcome followed by present obstacles) would be attenuated for COVID-related goals. As anticipated, UK-resident adults (n = 288) judged COVID-related goals such as keeping one's family safe to be less controllable compared to unrelated goals, and tended to engage different SRT modes (e.g., higher incidence of dwelling vs. indulging). Mental contrasting occurred equally for both goal types, but when predicting goal commitment, its typical beneficial effect was absent for COVID-related goals. Results are consistent with the proposition that low subjective control influences both the cognitive processing of goals (i.e., promoting dwelling) and subsequent motivational outcomes. This poses a challenge to current theory, calling for greater emphasis on controllability as a contributing factor in self-regulation and goal pursuit.

1 | INTRODUCTION

The coronavirus (SARS-2-COVID-19) pandemic has been an unprecedented public health emergency in terms of its worldwide reach and impact (World Health Organization, 2021). In the United Kingdom, total cases have exceeded 20 million, with over 170,000 fatalities (see tracker by Dong et al., 2020) and repeated lockdowns enforced to limit transmission of the virus (Barber et al., 2021). Although most psychological research on COVID-19 has focussed on its detrimental effects on mental health (Huang & Zhao, 2020; Park et al., 2021; Shamblaw et al., 2021; Wang et al., 2020; Yan et al., 2021), a pandemic on this scale also provides a unique test-bed to examine how previously recognized social cognitive mechanisms operate under altered societal conditions (Bavel et al., 2020). Specifically, the global and national context of uncertainty surrounding jobs, finance, and health could impact how individuals think about

and pursue their personal goals (Kokkoris & Stavrova, 2021; Ritchie et al., 2021). The current study utilized this unique, unstable societal context to assess whether the mechanisms of self-regulation (Armor & Taylor, 1998; Oettingen, 2012) operate differently when individuals have *low personal control* over future outcomes (e.g., health of relatives and job security), as compared against more controllable goals.

The self-regulatory strategy of mental contrasting has well-established benefits for the adoption of health behaviors, academic attainment, and interpersonal relations (Cross & Sheffield, 2019; Hauser, 2018; Mann et al., 2013; Oettingen, 2012). Hence, the pandemic situation allowed us to assess whether perceived controllability, a variable that is important (Wallston, 1992; Weiner, 1985) yet difficult to manipulate experimentally (Sheeran et al., 2003), would alter the functional value of mental contrasting. To pre-empt the findings, we show that different forms of self-regulatory thought (SRT) predominate for controllable versus uncontrollable goals, and that the usual motivational effect of mental contrasting is notably absent for COVID-related (uncontrollable) goals. We argue that these results call for a revision of key theories in the field of health and social psychology (Gollwitzer & Oettingen, 2012; Oettingen, 2012).

1.1 | SRT: A brief overview

Motivational and cognitive drivers of goal attainment have been studied across many behavioral domains (e.g., Gollwitzer & Sheeran, 2006; Mann et al., 2013; Oettingen, 2012; Pham & Taylor, 1999; Sevincer et al., 2017). It is widely agreed that merely harboring a goal, or having high expectations, does not ensure success. Rather, goal attainment also depends on the use of self-regulatory strategies operating on the level of conscious, deliberative thought (Conroy et al., 2015; Gollwitzer & Sheeran, 2006; Oettingen, 2000, 2012; Pham & Taylor, 1999). The form of a person's goal-related thoughts can influence the steps they take and ultimately dictate their degree of success, from academic grades (Pham & Taylor, 1999) to controlling one's alcohol consumption (Conroy et al., 2015).

Fantasy realization theory (Oettingen, 1996, 2000, 2012) defines several SRT modes, including *dwelling* solely on obstacles to success; *indulging* positive fantasies about ideal outcomes; and *mental contrasting*, a combination of the previous two. Mental contrasting entails considering a desired future state, followed by present obstacles to fulfillment (Oettingen, 2000), and is held to be superior to either dwelling or indulging. This is because contrasting desired future and present reality—in that order—brings motivation and performance into alignment with one's underlying expectations of success (Oettingen, 2012). Where expectations are high, motivation and behavior are reinforced; where they are low, one is likely to disengage from the goal in favor of other pursuits (Muraven & Baumeister, 2000; Oettingen, 2012). This *expectancy-dependent* effect has been found in a range of domains (e.g., health behaviors, academic attainment, interpersonal relations; Cross & Sheffield, 2019; Hauser, 2018; Mann et al., 2013; Oettingen, 2012). For instance, a person wishing to lose weight might consider the benefits of achieving that goal, followed by the obstacles posed by their current situation (e.g., sedentary lifestyle). The use of mental contrasting would either boost or attenuate motivation depending on how they viewed their chances of success (Oettingen & Wadden, 1991).

Instead of manipulating SRT modes, some studies have examined their "spontaneous" emergence when people freely describe their goals without specific instructions (Sevincer & Oettingen, 2013; Sevincer et al., 2017). This enables a more naturalistic snapshot of self-regulatory processes, allowing researchers to establish whether the same motivational differences persist for naturally occurring SRT modes. Sevincer and Oettingen (2013) found across three studies that 9%–27% of individuals spontaneously engaged in mental contrasting when asked to describe current interpersonal or academic goals. Importantly, mental contrasting conveyed the same motivational benefit in this context as when experimentally induced: Participants showed a stronger positive relationship between expectation and indicators of goal striving than those who simply indulged in positive fantasies (e.g., "I expect to come top of my class"), dwelled on present obstacles ("My current living situation is really disrupting my studies"), or contrasted the two with the present reality first (i.e., *reverse contrasting*; Oettingen, 2012).

Sevincer and Oettingen (2013) noted that the paradigm could be utilized to explore differences in spontaneous SRT according to personal and contextual factors, yet such work remains scarce (see Sevincer et al., 2017). The present study aims to further this line of inquiry by examining the mechanisms of spontaneous SRT in a novel context characterized by unstable societal conditions.

1.2 | Goals and self-regulation during the pandemic: What has changed?

First, it is important to note that goals have been conceptualized in contrasting ways within psychological research. While fantasy realization theory (Oettingen, 2000, 2012) generally takes goals to be discrete, positive future states (but see Brodersen & Oettingen, 2017), other literature emphasizes the ongoing management of affect and behavior in the face of adversity (i.e., *coping*; Folkman & Moskowitz, 2000; Lazarus & Folkman, 1984; S. E. Taylor & Schneider, 1989). S. E. Taylor and Schneider (1989) discuss how mental simulation underwrites the coping process by enabling people to anticipate stressful events, thereby avoiding them altogether or adjusting their own emotional response to limit their negative impact (cf. Baumeister et al., 2016; Rothbaum et al., 1982). Protecting oneself thus against negative outcomes—like striving for positive incentives—is an integral part of adaptive behavior (i.e., approach-avoidance; Elliot, 2006). From this perspective, goal pursuit may be viewed as the activity of managing simultaneous, competing concerns, discrete or continuous (Emmons, 1986; Klinger & Cox, 2011; Milyavskaya & Werner, 2018) and positive or negative in valence (Elliot, 2006; Folkman & Moskowitz, 2000; Higgins, 1998).

During the COVID-19 pandemic, individuals might acquire new, crisis-specific goals (e.g., coping with social isolation; Bland et al., 2020) while continuing to pursue other, unrelated goals that remain valid incentives for behavior (e.g., losing weight; Oettingen & Wadden, 1991). Given the overwhelmingly negative nature of people's appraisals and emotional responses to the pandemic (Shamblaw et al., 2021; S. Taylor et al., 2020; Wang et al., 2020; Zacher & Rudolph, 2021), one would expect many COVID-related goals to be negatively motivated ongoing concerns (e.g., negotiating prolonged threats to one's health and financial security). Feelings of personal control are also an important aspect to consider in this context (Rothbaum et al., 1982; Russell, 1982; Sheeran et al., 2003). Infectious diseases pose an unpredictable external threat (Pappas et al., 2009), and in the case of COVID-19, its rapid spread, relatively high mortality rate, and uncertainties surrounding transmission have contributed to widespread fear of the virus (Ahorsu et al., 2020). One would therefore expect COVID-related goals to be accompanied by low perceived control (Russell, 1982; Sheeran et al., 2003) and a tendency toward avoidance motivation (Elliot, 2006; Zacher & Rudolph, 2021). If one perceives the pandemic to be fundamentally uncontrollable, one's associated goals and concerns may be forlorn hopes lacking a sense of agency. The pandemic, therefore, presented an unparalleled opportunity to conduct a natural experiment on the role of perceived control in self-regulation and goal pursuit (cf. Russell, 1982; Sheeran et al., 2003; Thurber & Weisz, 1997).

1.3 | The present study

This study investigated the occurrence and motivational consequences of different SRT modes for two types of goals: COVID-related goals (perceived to be relatively uncontrollable) and COVID-unrelated goals (perceived to be more controllable). Our principal question was whether this difference in controllability would produce contrasting patterns of results. We tested this by examining the spontaneous prevalence of particular SRT modes (mental contrasting, dwelling, etc.) for the two-goal types (cf. Sevincer & Oettingen, 2013) and assessing whether the typical motivational benefit of mental contrasting would extend to this novel context (cf. Cross & Sheffield, 2019; Hauser, 2018; Oettingen, 2012). We used a cross-sectional online survey to obtain information on participants' most important goal or concern *related to the ongoing COVID-19 pandemic* and their most important goal or concern *unrelated to the pandemic*.

To our knowledge, this is the first study to compare goals from two concurrent domains within participants, while capturing SRT as it naturally occurs (cf. H. B. Kappes et al., 2011; Sevincer & Oettingen, 2013; Sevincer et al., 2017). Examining goals both related and unrelated to COVID-19 allows us to probe differences in cognitive style (i.e., engagement of particular SRT modes) and associated patterns of motivation (i.e., impact on the expectation-commitment relation) for the same individuals, contingent upon the type of goal. More broadly, the study has the potential to show how major societal events can be harnessed to inform (and potentially modify) well-established psychological theory.

1.4 | Hypotheses

There were two main study hypotheses. First, the relative prevalence of the different SRT modes (dwelling, indulging, mental contrasting, and reverse contrasting; Oettingen, 2012) was expected to differ between the two goal types. It is conceivable, based on the literature reviewed above, that the pandemic would cause people to adopt new concerns that are largely negative in nature (e.g., *avoiding* the virus) over which they feel little personal control (Park et al., 2021; Russell, 1982). However, there is no clear precedent for specific predictions as to the patterning of the four SRT modes in each condition, therefore these analyses should be regarded as exploratory.

Second, we expected to replicate typical findings on spontaneous mental contrasting for COVID-unrelated goals (i.e., an enhanced positive relationship between expectations of success and goal commitment; Oettingen, 2000, 2012). This would be consistent with previous research showing the same motivational effect across life domains and contextual factors such as mood (H. B. Kappes et al., 2011; Sevincer & Oettingen, 2013). Conversely, for COVID-related goals, where we anticipate lower controllability ratings, it is unclear how mentally contrasting an outcome (e.g., remaining uninfected) with present obstacles (e.g., ongoing infection risk) should benefit motivation. Instead, where obstacles to success are unpredictable or overwhelming, the usual mechanisms by which mental contrasting operates will be disrupted, reducing its efficacy (cf. A. Kappes & Oettingen, 2014; A. Kappes et al., 2013).

2 | METHODS

2.1 | Participants

We used Prolific Online (https://www.prolific.co/) to recruit a cross-sectional survey sample rapidly according to specific pre-screening parameters. The target demographic was adults resident in the United Kingdom with no recent health problems, since pandemic severity varied between countries (Pearce et al., 2020) and current illness/poor health status have been shown to influence psychological responses to the pandemic (Wang et al., 2020). Data were collected between May 6th and May 13th, 2020, hence all participants were currently subject to UK government lockdown restrictions, yet not experiencing direct medical effects of the virus nor any other acute illness.

A target sample size of 275 was determined based on comparable online studies of spontaneous mental contrasting (Sevincer & Oettingen, 2013; Study 1; Sevincer et al., 2017). Of 290 participants recruited through Prolific, two were excluded as they gave over-consistent numerical responses (e.g., a rating of "1" on all 7-point Likert scales) and/or explicitly declined to describe any goals. The final sample of 288 comprised 200 females, 83 males and five other gender identities/undisclosed (mean ± SD age = 31.1 ± 11.4 years). This provides estimated power of 85% to detect small effects

in multiple regression (R^2 change = 0.03; Faul et al., 2007). Participants were compensated £1.60 for their time (standard hourly rate of £8.00).

2.2 | Design

The study employed a cross-sectional repeated measures design, with each participant providing data on one goal of each type (COVID-related, COVID-unrelated). Chi-square and logistic regression analyses were used to probe associations between goal type and SRT mode. Hierarchical multiple regression was used to examine relationships between expectations and commitment, using a dummy-coded, binary predictor of SRT mode (mental contrasting vs. all other modes) and an interaction term of expectations by SRT mode to assess the expectancy-dependent effect of mental contrasting (following Sevincer & Oettingen, 2013). Participants also completed several control measures, described below. The main analyses were pre-registered at https://aspredicted.org/LBE_TIH.

2.3 | Materials and procedure

The survey was administered online via Qualtrics, with participants redirected automatically from the Prolific site. It was presented as a survey on "attitudes and experiences during the COVID-19 pandemic," omitting any mention of SRT or mental contrasting while remaining transparent about the general topic. Participants were given a summary of what would be required and asked to provide informed consent before beginning the survey. Answers were required for every section, with reminders appearing if any fields were left blank. Approximate survey duration was advertised as 12 min, based on prior piloting of materials. Upon completion, participants were debriefed regarding study aims and hypotheses and their data were automatically saved on Qualtrics and later transferred to password-protected offline storage for analysis.

2.3.1 | Goal processing measures

Thants' COVID-related and COVID-unrelated goals, one after the other in separate question blocks. Block order was randomized. In the COVID-related block, participants were asked to state a current goal in response to the following instruction:

> *The COVID-19 crisis is currently impacting many areas of public life as well as individuals' personal lives. Please state the personal goal or concern* ***relating to the COVID-19 crisis*** *that is most on your mind at present.*

In the COVID-unrelated block, the corresponding instruction was:

> *Please state the personal goal or concern* ***unrelated to the COVID-19 crisis*** *that is most on your mind at present.*

Otherwise, all measures were identical across the two blocks. The phrase "personal goal or concern" was formulated deliberately to encompass both discrete achievement goals and ongoing personal concerns (Austin & Vancouver, 1996), on the assumption that the latter may be particularly prevalent in the pandemic context. In other respects, instructions were closely modeled on those of Sevincer and Oettingen (2013).

After stating each goal, participants rated their associated expectations of success ("How LIKELY do you think it is that you will realize this goal/resolve this concern?") and incentive value ("How IMPORTANT is it to you to realize this goal/resolve this concern?") on a 7-point Likert scale ranging from 1 (*Not at all*) to 7 (*Very much so*). A single-item measure of controllability ("To what extent do you feel you have CONTROL over realizing this goal/resolving this concern?"), on the same 7-point scale, was included as a manipulation check.

Participants were then asked to elaborate by writing about any aspects of the stated goal that came to mind, with no time or word limit, as in the studies by Sevincer and Oettingen (2013). Finally, participants answered five 7-point Likert items to give a combined index of goal commitment. This included two negatively worded items ("How disappointed would you feel/how hard would it be for you if you did not realize this goal?") and three positively worded items ("How determined are you/how hard will you try/how energized do you feel to realize this goal?") taken from previous research (Oettingen, 2000; Sevincer & Oettingen, 2013).

2.3.2 | Control measures

The second part of the survey asked participants about their daily news media exposure (estimated in hours and minutes; de Vreese & Neijens, 2016) and overall level of concern regarding the pandemic (10-point Likert, 1 = *Not at all concerned*, 10 = *Intensely concerned*; cf. Cox & Klinger, 2004). Finally, participants gave a binary response regarding clinical vulnerability ("Do you have any pre-existing medical conditions which might increase the risk posed to you by COVID-19?").

2.3.3 | Coding of goal elaborations

Goal elaborations were first segmented into a number of statements (i.e., distinct syntactic units), which were then coded as either "desired future," "present reality," or "other" (examples given in Appendix). The entire elaboration was then classified into one of five categories (mental contrasting, reverse contrasting, indulging, dwelling, or other) according to the coding and order of the statements (i.e., mental contrasting = desired future followed by present reality, and so on; H. B. Kappes et al., 2011; Sevincer & Oettingen, 2013).

The full data set was coded in this way by an independent rater, blind to the two goal conditions, and a 25% random sample recoded by the first author. Initial interrater agreement for category classification was 72% ($\kappa = 0.62$), with a further 26% agreed upon through subsequent discussion. The remaining 2% of elaborations were coded as "other." The first rater then reviewed their classifications for the remaining data to ensure consistency.

3 | RESULTS

3.1 | Descriptive and preliminary analyses

Table 1 displays mean expectations, incentive value, controllability, and commitment for both goal types (COVID-related, COVID-unrelated). Means for expectations and incentive value were above the midpoint in both cases, indicating that participants chose to describe goals they viewed as both realistic and important (in line with Sevincer & Oettingen, 2013). Comparisons between goal types revealed that expectations were significantly higher for COVID-unrelated goals ($p = 0.001$; Table 1); hence, participants viewed these as more achievable. Controllability ratings also differed, with COVID-related goals generally viewed as somewhat uncontrollable (mean = 3.43, below scale midpoint) and COVID-unrelated goals rated as moderately controllable (mean = 4.79, above scale midpoint, $p < 0.001$; Table 1). Commitment ratings were high for both goal types.

Consistent with previous research (Oettingen, 2000; Sevincer & Oettingen, 2013), expectations were positively correlated with incentive value for both COVID-related goals ($r = 0.28$, $p < 0.001$) and COVID-unrelated goals ($r = 0.31$, $p < 0.001$).

After excluding 18 outliers with univariate scores further than 2.5 SD from the mean (remaining $N = 270$), participants generated an average of 6.16 statements for COVID-related goal elaborations (SD = 3.35) and 5.30 statements for COVID-unrelated elaborations (SD = 2.66); more statements were therefore generated for COVID-related goals ($t_{[269]} = 4.23$, $p < 0.001$).

Table 2 displays sample characteristics, including demographics (age, gender) and control measures (daily media exposure, overall concern regarding COVID-19, and medical vulnerability). Levels of overall concern were moderately high in the sample, with a mean value of 7.30 (above scale midpoint). The majority of participants (85.4%) reported that they did not have any specific medical vulnerability to COVID-19.

3.2 | Exploratory analysis of goal type and SRT mode

Table 3 shows the frequency of each SRT mode in the sample, for COVID-related and COVID-unrelated goals ("other" covers elaborations that did not fit into any other category). Dwelling was the most common thought mode for COVID-related goals (41%), followed by

TABLE 1 Mean (standard deviation) expectations, incentive value, controllability, and commitment for COVID-related and COVID-unrelated goals

Condition	Expectations (1–7)	Incentive value (1–7)	Controllability (1–7)	Commitment (5–35)
COVID-related	4.63 (1.60)	6.19 (1.15)	3.43 (1.92)	29.35 (5.26)[a]
COVID-unrelated	5.05 (1.38)	6.07 (1.12)	4.79 (1.67)	28.78 (4.93)
Mean difference	−0.417**	0.122	−1.36***	0.521

Note: **$p < 0.01$; ***$p < 0.001$.

[a]Two outliers (>2.5 SD from mean) removed, i.e., $N = 286$.

TABLE 2 Participant characteristics (demographics and control measures)

	Age (Years)	Gender			Media exposure (mins/day)	COVID concern (1–10)	Vulnerability	
	Mean (SD)	F	M	Other	Mean (SD)	Mean (SD)	No	Yes
Raw value	31.1 (11.4)	200	83	5	100.2 (113.5)	7.31 (1.84)	246	42
%	-	69.4	28.8	1.7	-	-	85.4	14.6

TABLE 3 Frequency of self-regulatory thought modes for COVID-related and COVID-unrelated goals

Self-regulatory thought mode	Dwelling		Indulging		Mental contrasting		Reverse contrasting		Other	
Condition	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
COVID-related	118	41.0	66	22.9	49	17.0	40	13.9	15	5.2
Unrelated	75	26.0	105	36.5	49	17.0	42	14.6	17	5.9

Note: Total *N* for both goal types = 288.

indulging (22.9%); this pattern was reversed for COVID-unrelated goals (indulging: 36.5%; dwelling: 26%). Moreover, 191 of 288 participants (66%) engaged different modes of thought when describing their COVID-related and COVID-unrelated goals. We therefore tested for an association between goal type (COVID-related, COVID-unrelated) and SRT category (dwelling, indulging, etc.). Such an association was evident ($\chi^2_{[4]} = 18.65$, $p = 0.001$). Examining standardized residuals (Agresti, 2013; Sharpe, 2015) indicated that the relative frequencies of dwelling ($z = \pm 4.65$, $p < 0.001$) and indulging ($z = \pm 4.24$, $p < 0.001$) contributed significantly to this association, whereas the other modes did not ($zs < \pm 0.37$, *ns*).

Logistic regression performed in R (R Core Team, 2022; Field et al., 2012) further demonstrated that the odds of a dwelling response were higher for both COVID-related (OR = 2.12, $p < 0.001$) and *less* controllable goals (OR = 0.516, $p < 0.001$; see Table 4). Conversely, the odds of an indulging response were higher for COVID-unrelated (OR = 0.483, $p < 0.001$) and *more* controllable goals (OR = 1.592, $p < 0.001$; see Table 5). The two predictors did not interact in either model ($ps > 0.3$, *ns*).

When "other" elaborations were excluded and dwelling, indulging, and reverse contrasting combined (producing a dichotomous measure; Sevincer & Oettingen, 2013), mental contrasting was equally frequent for both goal types (17%; $\chi^2_{[1]} = 0.002$, $p = 0.97$). The association between goal type and SRT mode therefore reflects differences in the prevalence of dwelling and indulging, rather than mental contrasting.

No associations were found between dichotomous SRT mode and survey block order ($\chi^2_{[1]} < 0.15$, $p > 0.70$), or medical vulnerability ($\chi^2_{[1]} < 2.31$, $p > 0.13$), for either goal type. However, an association was evident between SRT mode and gender, specifically for COVID-related goals ($\chi^2_{[1]} = 4.99$, $p = 0.026$). Here, 22% of females mentally contrasted, versus only 10% of males (five individuals reporting other genders were not included here due to small cell counts). For COVID-unrelated goals, this pattern was absent ($\chi^2_{[1]} = 0.49$, $p = 0.48$).

In sum, exploratory analysis of SRT mode frequencies suggests that while mental contrasting occurred with equal frequency for both goal types, dwelling occurred more frequently for COVID-related (and less controllable) goals and indulging occurred more frequently for unrelated (and more controllable) goals. There may also be gender differences in the tendency to spontaneously engage mental contrasting.

TABLE 4 Hierarchical logistic regression model predicting incidence of dwelling self-regulatory thought (SRT)

Model	Included	B(SE)	z	p	95% CI for odds ratio		
					Lower	Point	Upper
1	Constant	−1.044 (0.134)	−7.774	<0.001			
	Relatedness	0.679 (0.180)	3.771	<0.001	1.388	1.972	2.813
2	Constant	−1.141 (0.146)	−7.837	<0.001			
	Relatedness	0.752 (0.191)	3.936	<0.001	1.464	2.121	3.098
	Controllability	−0.662 (0.140)	−4.716	<0.001	0.389	0.516	0.676
	Relatedness × controllability	0.173 (0.190)	0.909	0.364	0.819	1.189	1.730

Note: Deviance criterion used to assess model fit improvement (Field et al., 2012); $\chi^2_{(2)} = 39.2$, $p < 0.0001$.

TABLE 5 Hierarchical logistic regression model predicting incidence of indulging self-regulatory thought (SRT)

Model	Included	B(SE)	z	p	95% CI for odds ratio		
					Lower	Point	Upper
1	Constant	−0.555 (0.122)	−4.538	<0.001			
	Relatedness	−0.656 (0.186)	−3.532	<0.001	0.450	0.519	0.728
2	Constant	−0.587 (0.127)	−4.635	<0.001			
	Relatedness	−0.727 (0.198)	−3.672	<0.001	0.326	0.483	0.710
	Controllability	0.465 (0.134)	3.467	<0.001	1.231	1.592	2.086
	Relatedness × controllability	0.156 (0.199)	0.787	0.431	0.791	1.169	1.730

Note: Deviance criterion used to assess model fit improvement (Field et al., 2012); $\chi^2_{(2)} = 32.0$, $p < 0.0001$.

3.3 | Predicting commitment for COVID-related and COVID-unrelated goals

3.3.1 | *Bivariate analysis*:

Bivariate analyses revealed positive relationships between expectations and commitment for both COVID-related ($r = 0.31$, $p < 0.001$) and COVID-unrelated goals ($r = 0.29$, $p < 0.001$), in line with previous research (Oettingen, 2000; Sevincer & Oettingen, 2013). Overall concern regarding COVID-19 was also positively related to commitment for both goal types ($rs > 0.15$, $ps < 0.05$). For COVID-related goals, commitment also showed positive relationships with controllability ($r = 0.14$, $p = 0.017$) and daily media exposure (square root transformation; $r = 0.12$, $p = 0.046$). These measures were therefore included in subsequent regression models.

Commitment scores were not related to participants' age for either goal type ($rs < 0.06$, $ps > 0.33$); nor to the number of statements generated ($rs < 0.10$, $ps > 0.12$). Furthermore, no reliable differences were found by dichotomous gender ($ts < 1.70$, $ps > 0.09$) or vulnerability ($ts < 1.73$, $ps > 0.09$). These measures are disregarded hereafter.

3.3.2 | Confirmatory multiple regression

The first hierarchical regression model (Table 6) predicted commitment scores for COVID-related goals. In the first step, we entered relevant control predictors as identified above; of these, controllability ($b = 0.460$, $p = 0.005$) and overall concern ($b = 0.524$, $p = 0.003$) contributed significantly to the model ($R^2 = 0.065$, $p < 0.001$). In the second step, dichotomous SRT mode (dummy coded; 0 = mental contrasting, 1 = other modes) and expectations (mean-centered; Aiken & West, 1991) were entered as additional predictors. Only expectations contributed significantly to the model ($b = 1.057$, R^2 change = 0.081, $p < 0.001$). In the final step, the interaction of SRT mode and expectations was added (Sevincer & Oettingen, 2013), explaining no additional variance ($b = -0.023$, R^2 change < 0.001, $p = 0.965$). The final model explained 14.5% of variance in commitment scores for COVID-related goals.

The second model (Table 7) predicted commitment scores for COVID-unrelated goals. In Step 1, overall concern was entered as a single control predictor, producing a significant model ($R^2 = 0.026$, $p = 0.007$). In Step 2, dichotomous SRT mode and expectations were added to the model; only expectations contributed significantly ($b = 1.043$, R^2 change = 0.093, $p < 0.001$). In the third step, the interaction of SRT mode and expectations was added, in this case explaining significant additional variance ($b = -1.104$, R^2 change = 0.014, $p = 0.040$). This indicates an expectancy-dependent effect of mental contrasting in line with previous research (Sevincer & Oettingen, 2013)[1]. The final model explained 13.3% of variance in commitment scores for COVID-unrelated goals.

To summarize, the expectancy-dependent effect of mental contrasting in predicting goal commitment (Oettingen, 2000, 2012;

TABLE 6 Hierarchical regression model predicting commitment for COVID-related goals

Model step	R^2	R^2 change	p	Predictor	B	SE(B)	β	p
1	0.065	0.065	<0.001	Controllability	0.460	0.164	0.168	0.005
				Media exposure[a]	0.113	0.088	0.079	0.196
				Overall concern	0.524	0.176	0.182	0.003
2	0.145	0.081	<0.001	Controllability	0.046	0.178	0.017	0.797
				Media exposure[a]	0.117	0.084	0.082	0.164
				Overall concern	0.571	0.169	0.198	0.001
				Self-regulatory thought (SRT) mode	0.502	0.784	0.037	0.522
				Expectations	1.057	0.213	0.321	<0.001
3	0.145	<0.001	0.965	Controllability	0.046	0.178	0.017	0.797
				Media exposure[a]	0.118	0.084	0.082	0.165
				Overall concern	0.570	0.171	0.198	0.001
				SRT mode	0.501	0.786	0.037	0.524
				Expectations	1.076	0.481	0.327	0.026
				SRT mode × expectations	−0.023	0.516	−0.006	0.965

Note: Included $N = 270$.

[a]Square root transformed before regression.

TABLE 7 Hierarchical regression model predicting commitment for COVID-unrelated goals

Model step	R^2	R^2 change	*p*	Predictor	*B*	SE(*B*)	*β*	*p*
1	0.026	0.026	0.007	Overall concern	0.429	0.159	0.162	0.007
2	0.119	0.093	<0.001	Overall concern	0.441	0.153	0.167	0.004
				Self-regulatory thought (SRT) mode	−1.043	0.729	−0.083	0.154
				Expectations	1.043	0.201	0.299	<0.001
3	0.133	0.014	0.040	Overall concern	0.458	0.153	0.173	0.003
				SRT mode	−1.221	0.729	−0.097	0.095
				Expectations	1.963	0.489	0.562	<0.001
				SRT mode × expectations	−1.104	0.536	−0.288	0.040

Note: Included $N = 271$.

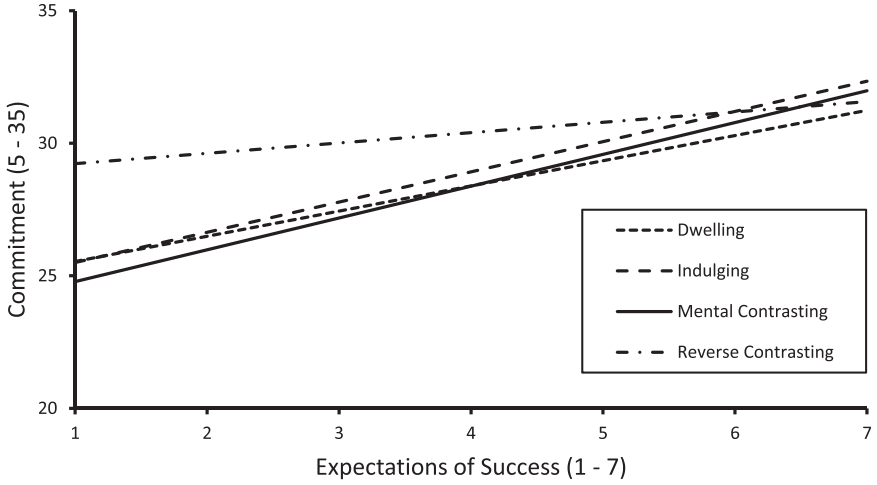

FIGURE 1 COVID-related goals: Regression lines for the effect of expectations on commitment by self-regulatory thought (SRT) mode

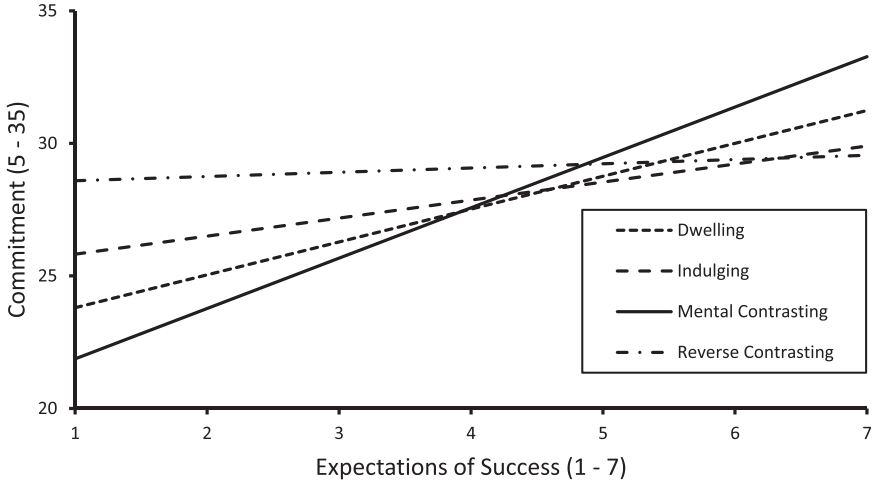

FIGURE 2 COVID-unrelated goals: Regression lines for the effect of expectations on commitment by self-regulatory thought (SRT) mode

Sevincer & Oettingen, 2013; Sevincer et al., 2017) was only evident in this sample when analyzing goals *unrelated* to the COVID-19 pandemic. This pattern is presented graphically in Figures 1 and 2. For COVID-related goals (Figure 1), the positive expectation-commitment relationship differs minimally across SRT modes (except for reverse contrasting). For COVID-unrelated goals (Figure 2), mental contrasting demonstrates the steepest positive slope of all four thought modes.

4 | DISCUSSION

The present study investigated spontaneous SRT and goal commitment for two goal types expected to differ in terms of perceived controllability. This was achieved by examining everyday goal pursuit during the COVID-19 pandemic (cf. Kokkoris & Stavrova, 2021; Ritchie et al., 2021). A well-powered sample of UK-resident adults completed an online survey, reporting information on their single most important COVID-related and COVID-unrelated personal goals. We expected the incidence of different spontaneous SRT modes to differ between goal types, since COVID-related goals would often concern negative possibilities (e.g., the threat of catching the virus; Bacon & Corr, 2020; Zacher & Rudolph, 2021) that fall outside one's personal control (Park et al., 2021; Russell, 1982; Thurber & Weisz, 1997). We also predicted that mental contrasting would have an attenuated effect on the expectation-commitment relation (Oettingen, 2000) for COVID-related goals.

The data provided some support for both hypotheses. First, while mental contrasting occurred with equal frequency across goal types (17% of responses, comparable to Sevincer & Oettingen, 2013), differences emerged in the prevalence of the other modes, with dwelling predominating for COVID-related goals (41% of responses) and indulging, for unrelated goals (36.5%). This equates to a more-than-doubling of the odds of dwelling in the former case, and a similar increase in indulging in the latter. Moreover, perceived controllability influenced the odds of both dwelling (negatively) and indulging (positively), regardless of goal type. These additive effects imply that our manipulation successfully captured differences in perceived control, albeit not absolutely, enabling us to identify two distinct self-regulatory patterns occurring simultaneously for goals of different types.

Second, the typical motivational effect of mental contrasting (Oettingen, 2000, 2012) was not consistently replicated in our study. After controlling for the independent effect of expectations, the anticipated interaction was absent when predicting commitment for COVID-related goals ($\beta = -0.006$, $p > 0.05$), but evident for COVID-unrelated goals ($\beta = -0.288$, $p < 0.05$). These results support the proposition that SRT may function differently in cases where perceived control is unusually low (cf. Cross & Sheffield, 2019; Oettingen, 2012).

By examining goals related and unrelated to an unfolding societal crisis, our study has identified real-time differences in cognitive and motivational aspects of goal pursuit (Gollwitzer & Oettingen, 2012; Milyavskaya & Werner, 2018) between domains where individuals feel differing levels of control over the respective outcomes. We now seek to explain and evaluate these differences, drawing on previous literature on self-regulation, coping, and the psychological effects of COVID-19.

4.1 | Self-regulatory differences during COVID-19: A question of control?

Analysis of controllability ratings for the two-goal types confirmed the anticipated difference, with COVID-unrelated goals rated as much more controllable (cf. Sheldon & Elliot, 1998). COVID-related goals garnered a mean rating below the scale midpoint, indicating that participants felt a low absolute level of control over these outcomes (e.g., "I want my family to stay healthy… My children don't live with me, so I can't influence it directly"). This may partially reflect a general disparity in perceived control over health-related versus non-health-related events (Lau & Ware, 1981; Wallston, 1992), besides the specific psychological challenges of the pandemic (Panayiotou et al., 2021; Pappas et al., 2009).

Logistic regression further revealed that controllability influenced the form of a person's thoughts about their goals over and above the effect of goal type. The odds of dwelling almost halved for every point increase in controllability (1–7 Likert), while the odds of indulging increased by over 50%. Hence, though goal type may not represent a "pure" manipulation, this provides converging evidence by showing a direct link between perceived control and patterns of spontaneous SRT (cf. H. B. Kappes et al., 2011; Sevincer et al., 2017). In other words, controllability predicts the cognitive processing of goals in the absence of specific instructions; and our manipulation captures a broad, within-subjects difference on this characteristic. Moreover, the results are novel in that they highlight the application of other SRT modes, which are often thrown together or overlooked in a literature focused around mental contrasting (Oettingen, 2012; Sevincer & Oettingen, 2013; Sevincer et al., 2017). With this in mind, we next consider how links between SRT mode and goal commitment may depend upon controllability.

4.2 | Goal commitment under conditions of limited control

Divergent commitment results for the two goal types may be attributable to the difference in controllability identified above. Expectations predicted commitment for both goal types as anticipated (Oettingen, 2000; Sevincer & Oettingen, 2013), yet when mental contrasting was engaged without an accompanying feeling of personal control (i.e., for COVID-related goals), its usual expectancy-dependent effect was absent. This may reflect suppression of the cognitive mechanisms of mental contrasting (A. Kappes & Oettingen, 2014; A. Kappes et al., 2013), and/or enhanced motivational effects of the other SRT modes, under conditions of limited control.

Considering the first possibility, mental contrasting entails the relational processing of a desired future and a present reality (Oettingen et al., 2001). Where expectations are high, associative links are formed such that aspects of the present situation become drivers for goal-directed action (A. Kappes & Oettingen, 2014; A. Kappes et al., 2013), increasing goal commitment. However, the present results show that COVID-related goals were viewed as fundamentally less controllable than COVID-unrelated goals (Russell, 1982; Thurber & Weisz, 1997). Thus, despite an equal prevalence of "mental contrasting" responses, low perceived control might have disrupted the relational processing of desired future and

present reality, reducing its expectancy-dependent effect. The expectation-commitment relationship under mental contrasting was significant for both goal types, yet this corresponded to a conventional large effect (Cohen, 1988) for COVID-unrelated goals ($r_{[49]} = 0.50$, $p < 0.001$) and only a medium effect for COVID-related goals ($r_{[49]} = 0.36$, $p = 0.013$). Since the subgroups were small and partially overlapping, we did not directly compare these effects. Nonetheless, it is plausible that participants struggled to see uncontrollable, COVID-related outcomes as contingent upon their present actions, even when both aspects were considered in the requisite order (cf. Oettingen et al., 2001), thereby attenuating the benefit of this strategy.

A second, compatible possibility is that the other SRT modes operated differently for COVID-related goals. For instance, some participants might have found solace in mentally "accentuating the positive" after realizing that pandemic-related events were outside their direct control—hence receiving the label of indulging in the present methodology (e.g., fantasizing about a rapid return to social interaction). This could be construed as an application of *secondary control* (Rothbaum et al., 1982; Thurber & Weisz, 1997)—moderating one's response to uncontrollable external events—which is an important aspect of coping (Armor & Taylor, 1998; Baumeister et al., 2016). Numerical comparison of effect sizes (Cohen, 1988) is consistent with this possibility: The estimated coefficient for the expectation-commitment relationship for those indulging about their COVID-related goals ($r_{[66]} = 0.35$, $p = 0.004$) was more than twice that found for indulging about COVID-unrelated goals ($r_{[105]} = 0.16$, $p = 0.10$, *ns*).

Collectively, our results on SRT modes and commitment effects present a nuanced picture of the influence of subjective control on cognitive and motivational aspects of goal pursuit. COVID-related goals were typically less controllable and hence more likely to evoke pessimistic, dwelling responses (Park et al., 2021; Zacher & Rudolph, 2021); yet those that were relatively more controllable often evoked other modes, such as indulging and mental contrasting, despite the negative circumstances (Baumeister et al., 2016; Rothbaum et al., 1982). Furthermore, different downstream motivational patterns were found for the two goal types, with the usual benefit of spontaneous mental contrasting notably absent for COVID-related (uncontrollable) goals. These findings present a novel contribution to the literature (Oettingen, 2012; Sevincer & Oettingen, 2013; Sevincer et al., 2017) and highlight the need to update existing theoretical models to account for the influence of controllability.

4.3 | Implications for theories of goal pursuit

Our findings concerning spontaneous SRT mode occurrence highlight controllability as an important environmental determinant of SRT, distinct from internal variables such as mood or personality traits (Bacon & Corr, 2020; H. B. Kappes et al., 2011; Kokkoris & Stavrova, 2021; Sevincer et al., 2017). Moreover, our commitment results challenge the assumption that mental contrasting is always a superior motivational strategy (Oettingen, 2012). Confirmatory analyses demonstrated the typical advantage only for pandemic-unrelated goals (which were perceived as more controllable). Hence, investigating goal pursuit during COVID-19 not only poses a contextually specific exception to fantasy realization theory (Oettingen,1996, 2000, 2012), but also highlights a wider theoretical limitation: The theory struggles to explain individuals' motivation in cases where they have little direct control over important outcomes.

For instance, health outcomes like a prognosis or the success of a medical intervention are often beyond one's control (Lau & Ware, 1981; Wallston, 1992). The desired future, in this context, might be a positive health outcome. However, if one knows one's present actions cannot change the outcome, no amount of mental contrasting (nor any other motivational strategy) will illuminate a path to success. Consider the following case: "I hope I don't have cancer, but I've got a suspicious lump." Here, an ideal future is juxtaposed with an inconducive present reality, as per the theory (Oettingen, 2000, 2012); yet one cannot mentally circumvent the lump and thereby ensure the absence of cancer. Arguably, an uncontrollable threat to one's desired future can only be acknowledged and accepted.

How might one take a positive approach in a fundamentally uncontrollable context? In such cases, different forms of SRT might be more adaptive (Baumeister et al., 2016; Sheppes et al., 2014). For example, one might adopt a "bracing" approach before hearing from a medical consultant, thereby employing secondary control to moderate one's reaction to an uncontrollable possible negative outcome (Shepperd et al., 2000; K. M. Taylor & Shepperd, 1998). This would entail focussing on outcomes and one's anticipated reactions to them (i.e., *affective forecasting*; Wilson & Gilbert, 2005), rather than forging links with the present as in mental contrasting (A. Kappes & Oettingen, 2014). Similarly, indulging in positive fantasies—typically unhelpful to goal pursuit (Oettingen et al., 2001)—could be beneficial to motivation in this context (in line with Panayiotou et al., 2021, who showed a benefit of short-term denial on quality of life in Cypriot students during COVID-19). Moreover, when one desired outcome is uncontrollable, the pleasurable impact of positive fantasy (Gilbert & Wilson, 2007) might have a positive knock-on effect on one's progress toward other goals (Carver, 2003; Wrosch et al., 2003).

Crucially, to our knowledge, mental contrasting research has so far omitted to measure the subjective controllability of goals. Instead, the literature assumes that perceptions of control are a facet of expectations (Gollwitzer & Oettingen, 2012; Oettingen et al., 2001). By contrast, we have made an operational distinction between the two. Furthermore, our within-subjects comparison reaffirms that an individual can adopt contrasting approaches in different self-regulatory domains (Armor & Taylor, 1998; Baumeister et al., 2016; Sheppes et al., 2014)—enabling flexible, adaptive responses in difficult circumstances such as the pandemic (Mascret, 2020; Panayiotou et al., 2021). Finally, we have articulated plausible mechanisms by which low subjective control might moderate the motivational effects of different SRT modes.

These novel developments call for a change of emphasis in the goal pursuit literature (Milyavskaya & Werner, 2018). Fantasy realization theory (Oettingen, 1996, 2000, 2012) currently provides

a useful framework for explaining the effects of SRT for highly controllable goals. However, it falls short when trying to explain how the same modes of thought operate for less controllable goals. In our view, a useful next step would be to integrate this theory with insights from the coping literature, which specifies how different forms of prospective thought can be adaptive when responding to unavoidable stressors (Armor & Taylor, 1998; Benight & Bandura, 2004; Folkman & Moskowitz, 2000; S. E. Taylor & Schneider, 1989). New theoretical developments should also address individual differences like trait self-regulation/self-control (Kokkoris & Stavrova, 2021; Sevincer et al., 2017) and regulatory focus (Higgins, 1998), and how these might interact with controllability in determining self-regulatory outcomes.

4.4 | Limitations and future directions

Here, we highlight two main limitations of the present study; arguably the most substantial is the use of self-reported commitment as an index of goal pursuit. Although standard practice in the literature (Oettingen, 2012; Sevincer & Oettingen, 2013), such subjective measures may be weakly aligned with actual behavior (Armitage & Conner, 2001; Prestwich et al., 2008). We acknowledge that our results, while reflecting a rich variety of goal-related experience, do not tell us whether each goal was ultimately achieved. Thus, we cannot be certain that any differences in commitment scores would translate to observable differences in behavior. We therefore recommend that future research implement prospective designs to investigate objective performance outcomes while varying perceived control (see Sheeran et al., 2003). This would also enable researchers to gauge how far controllability effects generalize beyond the present (pandemic) context.

Second, mental contrasting for COVID-related goals was more prevalent in women; this unexpected finding warrants further investigation. Recent research shows that women are more optimistic than men in their expectations of how the pandemic will progress (Asimakopoulou et al., 2020; Sobol et al., 2020), and also more compliant with public health regulations (Sobol et al., 2020). This evidence is consistent with established understanding of the role of gender norms in health behaviors (Fleming & Agnew-Brune, 2015) and may help to explain our finding of a gender difference in SRT mode prevalence. However, since SRT mode had no moderating influence on commitment for COVID-related goals, our interpretations have not focussed on this aspect. It will therefore be important for future research to explore possible gender differences in spontaneous SRT, as well as continuing to examine effects of gender on the psychological impact of the pandemic.

4.5 | Conclusions

As predicted, COVID-related personal goals were perceived as significantly less controllable than COVID-unrelated goals in our sample of UK adults. Furthermore, different SRT modes predominated when participants described their COVID-related and unrelated goals: Dwelling responses were more than twice as likely for COVID-related than for unrelated goals; the opposite was true for indulging responses. Thought mode incidence also depended on controllability ratings, with less controllable goals being more prone to evoke dwelling regardless of goal type. When examining motivational consequences, expectations strongly predicted goal commitment for both goal types, yet the expectancy-dependent benefit of mental contrasting was nonsignificant for COVID-related goals. Fundamentally, goals like keeping one's family safe throughout the pandemic seemed largely outside one's personal control—arguably promoting threat-focussed, dwelling responses and altering the motivational consequences of SRT. Specifically, we suggest that the relational processing by which mental contrasting usually takes effect may have been disrupted, undermining its motivational effect. The present findings call for greater emphasis on controllability as a contributing factor in self-regulation and goal pursuit.

ACKNOWLEDGMENTS

We would like to thank Timur Sevincer for providing helpful methodological advice and Tilly Sykes for assisting with data coding. We are also extremely grateful to the editor and reviewers whose input informed successive revisions of the manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ORCID

J. Helgi Clayton McClure https://orcid.org/0000-0001-6858-3116
Scott N. Cole https://orcid.org/0000-0001-8176-283X

ENDNOTE

[1] Note that a combined analysis of COVID-related and unrelated data failed to find a significant three-way interaction of goal type × SRT mode × expectations ($b = 0.045$, $p = 0.43$), meaning the data do not provide direct evidence of a *difference* in the efficacy of mental contrasting between goal types. Nonetheless, the clear null result in Table 6 by itself poses a challenge to previous research.

REFERENCES

Agresti, A. (2013). *Categorical data analysis* (3rd ed.). Wiley.

Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: development and initial validation. *International Journal of Mental Health and Addiction*, *20*, 1537–1545. https://doi.org/10.1007/s11469-020-00270-8

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, *40*, 471–499.

Armor, D. A., & Taylor, S. E. (1998). Situated optimism: Specific outcome expectancies and self-regulation. *Advances in Experimental Social Psychology*, *30*(C), 309–379. https://doi.org/10.1016/S0065-2601(08)60386-X

Asimakopoulou, K., Hoorens, V., Speed, E., Coulson, N. S., Antoniszczak, D., Collyer, F., Deschrijver, E., Dubbin, L., Faulks, D., Forsyth, R., Goltsi, V., Harsløf, I., Larsen, K., Manaras, I., Olczak-Kowalczyk, D., Willis, K., Xenou, T., & Scambler, S. (2020). Comparative optimism about infection and recovery from COVID-19; implications for adherence with lockdown advice. *Health Expectations*, *23*(6), 1502–1511. https://doi.org/10.1111/hex.13134

Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, *122*(3), 338–375. https://doi.org/10.1037//0033-2909.120.3.338

Bacon, A. M., & Corr, P. J. (2020). Coronavirus (COVID-19) in the United Kingdom: A personality-based perspective on concerns and intention to self-isolate. *British Journal of Health Psychology*, *25*(4), 839–848. https://doi.org/10.1111/bjhp.12423

Barber, S., Brown, J., & Ferguson, D. (2021). *Coronavius: Lockdown laws*. https://researchbriefings.files.parliament.uk/documents/CBP-8875/CBP-8875.pdf

Baumeister, R. F., Vohs, K. D., & Oettingen, G. (2016). Pragmatic prospection: How and why people think about the future. *Review of General Psychology*, *20*(1), 1–55. https://doi.org/10.1037/gpr0000060

Bavel, J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., Druckman, J. N., Drury, J., Dube, O., Ellemers, N., Finkel, E. J., Fowler, J. H., Gelfand, M., Han, S., Haslam, S. A., Jetten, J., … Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behaviour*, *4*(5), 460–471. https://doi.org/10.1038/s41562-020-0884-z

Benight, C. C., & Bandura, A. (2004). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy*, *42*(10), 1129–1148. https://doi.org/10.1016/j.brat.2003.08.008

Bland, A. R., Roiser, J. P., Mehta, M. A., Sahakian, B. J., Robbins, T. W., & Elliott, R. (2020). COVID-19 induced social isolation; implications for understanding social cognition in mental health. *Psychological Medicine*, *1306*, 19–20. https://doi.org/10.1017/S0033291720004006

Brodersen, G., & Oettingen, G. (2017). Mental contrasting of a negative future with a positive reality regulates state anxiety. *Frontiers in Psychology*, *8*, 1–11. https://doi.org/10.3389/fpsyg.2017.01596

Carver, C. S. (2003). Pleasure as a sign you can attend to something else: Placing positive feelings within a general model of affect. *Cognition and Emotion*, *17*(2), 241–261. https://doi.org/10.1080/02699930302294

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Conroy, D., Sparks, P., & De Visser, R. (2015). Efficacy of a non-drinking mental simulation intervention for reducing student alcohol consumption. *British Journal of Health Psychology*, *20*(4), 688–707. https://doi.org/10.1111/bjhp.12133

Cox, W. M., & Klinger, E. (2004). Measuring motivation: The motivational structure questionnaire and personal concerns inventory. In W. M. Cox, & E. Klinger (Eds.), *Handbook of motivational counseling: Concepts, approaches, and assessment* (1st ed., pp. 141–175). Wiley.

Cross, A., & Sheffield, D. (2019). Mental contrasting for health behaviour change: A systematic review and meta-analysis of effects and moderator variables. *Health Psychology Review*, *13*(2), 209–225. https://doi.org/10.1080/17437199.2019.1594332.

de Vreese, C. H., & Neijens, P. (2016). Measuring media exposure in a changing communications environment. *Communication Methods and Measures*, *10*(2–3), 69–80. https://doi.org/10.1080/19312458.2016.1150441

Dong, E., Du, H., & Gardner, L. (2020). An interactive web-based dashboard to track COVID-19 in real time. *The Lancet Infectious Diseases*, *20*(5), 533–534. https://doi.org/10.1016/S1473-3099(20)30120-1

Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion*, *30*(2), 111–116. https://doi.org/10.1007/s11031-006-9028-7

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social Psychology*, *51*(5), 1058–1068. https://doi.org/10.1037/0022-3514.51.5.1058

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191.

Field, A., Miles, J., & Field, Z. (2012). *Discovering statistics using R*. SAGE Publications. https://books.google.co.uk/books?id=Q9GCAgAAQBAJ

Fleming, P. J., & Agnew-Brune, C. (2015). Current trends in the study of gender norms and health behaviors. *Current Opinion in Psychology*, *5*, 72–77. https://doi.org/10.1016/j.copsyc.2015.05.001

Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, *55*(6), 647–654. https://doi.org/10.1037/0003-066X.55.6.647

Gilbert, D. T., & Wilson, T. D. (2007). Prospection: Experiencing the future. *Science*, *317*(5843), 1351–1354. https://doi.org/10.1126/science.1144161

Gollwitzer, P. M., & Oettingen, G. (2012). Goal pursuit. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (pp. 227–250). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195399820.013.0013

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advantages in Experimental Social Psychology*, *38*, 69–119.

Hauser, M. D. (2018). The mind of a goal achiever: Using mental contrasting and implementation intentions to achieve better outcomes in general and special education. *Mind, Brain, and Education*, *12*(3), 102–109. https://doi.org/10.1111/mbe.12186

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. *Advances in Experimental Social Psychology*, *30*, 1–46. https://doi.org/10.1016/S0065-2601(08)60381-0

Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Research*, *288*(March), 112954. https://doi.org/10.1016/j.psychres.2020.112954

Kappes, A., & Oettingen, G. (2014). The emergence of goal pursuit: Mental contrasting connects future and reality. *Journal of Experimental Social Psychology*, *54*, 25–39. https://doi.org/10.1016/j.jesp.2014.03.014

Kappes, A., Wendt, M., Reinelt, T., & Oettingen, G. (2013). Mental contrasting changes the meaning of reality. *Journal of Experimental Social Psychology*, *49*(5), 797–810. https://doi.org/10.1016/j.jesp.2013.03.010

Kappes, H. B., Oettingen, G., Mayer, D., & Maglio, S. (2011). Sad mood promotes self-initiated mental contrasting of future and reality. *Emotion (Washington, D.C.)*, *11*(5), 1206–1222. https://doi.org/10.1037/a0023983

Klinger, E., & Cox, W. M. (2011). Motivation and the goal theory of current concerns. In E. Klinger, & W. M. Cox (Eds.), *Handbook of motivational counseling: Concepts, approaches, and assessment* (2nd ed., pp. 1–47). John Wiley & Sons, Ltd. https://doi.org/10.1002/9780470979952.ch1

Kokkoris, M. D., & Stavrova, O. (2021). Staying on track in turbulent times: Trait self-control and goal pursuit during self-quarantine. *Personality and Individual Differences*, *170*(2020), 110454. https://doi.org/10.1016/j.paid.2020.110454

Lau, R. R., & Ware, J. F. (1981). Refinements in the measurement of health-specific locus-of-control beliefs. *Medical Care*, *19*(11), 1147–1158. https://www.jstor.org/stable/3764158

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company. https://books.google.co.uk/books?id=iySQQuUpr8C

Mann, T., De Ridder, D., & Fujita, K. (2013). Self-regulation of health behavior: Social psychological approaches to goal setting and goal

striving. *Health Psychology*, *32*(5), 487–498. https://doi.org/10.1037/a0028533

Mascret, N. (2020). Confinement during Covid-19 outbreak modifies athletes' self-based goals. *Psychology of sport and exercise*, *51*(July), 101796. https://doi.org/10.1016/j.psychsport.2020.101796

Milyavskaya, M., & Werner, K. M. (2018). Goal pursuit: Current state of affairs and directions for future research. *Canadian Psychology/Psychologie Canadienne*, *59*(2), 163–175. https://doi.org/10.1037/cap0000147

Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle. *Psychological Bulletin*, *126*(2), 247–259. https://doi.org/10.1037/0033-2909.126.2.247

Oettingen, G. (1996). Positive fantasy and motivation. In P. M. Gollwitzer, & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 236–259). The Guilford Press.

Oettingen, G. (2000). Expectancy effects on behavior depend on self-regulatory thought. *Social cognition*, *18*(2), 101–129. https://doi.org/10.1521/soco.2000.18.2.101

Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, *23*(1), 1–63. https://doi.org/10.1080/10463283.2011.643698

Oettingen, G., Pak, H. J., & Schnetter, K. (2001). Self-regulation of goal setting: Turning free fantasies about the future into binding goals. *Journal of Personality and Social Psychology*, *80*(5), 736–753. https://doi.org/10.1037/0022-3514.80.5.736

Oettingen, G., & Wadden, T. A. (1991). Expectation, fantasy, and weight loss: Is the impact of positive thinking always positive. *Cognitive Therapy and Research*, *15*(2), 167–175. https://doi.org/10.1007/BF01173206

Panayiotou, G., Panteli, M., & Leonidou, C. (2021). Coping with the invisible enemy: The role of emotion regulation and awareness in quality of life during the COVID-19 pandemic. *Journal of Contextual Behavioral Science*, *19*(2020), 17–27. https://doi.org/10.1016/j.jcbs.2020.11.002

Pappas, G., Kiriaze, I. J., Giannakis, P., & Falagas, M. E. (2009). Psychosocial consequences of infectious diseases. *Clinical Microbiology and Infection*, *15*(8), 743–747. https://doi.org/10.1111/j.1469-0691.2009.02947.x

Park, C. L., Finkelstein-Fox, L., Russell, B. S., Fendrich, M., Hutchison, M., & Becker, J. (2021). Americans' distress early in the COVID-19 pandemic: Protective resources and coping strategies. *Psychological Trauma: Theory, Research, Practice, and Policy*, *13*, 422–431. https://doi.org/10.1037/tra0000931

Pearce, N., Lawlor, D. A., & Brickley, E. B. (2020). Comparisons between countries are essential for the control of COVID-19. *International Journal of Epidemiology*, *49*(4), 1059–1062. https://doi.org/10.1093/ije/dyaa108

Pham, L. B., & Taylor, S. E. (1999). From thought to action: Effects of process- versus outcome-based mental simulations on performance. *Personality and Social Psychology Bulletin*, *25*(2), 250–260.

Prestwich, A., Perugini, M., & Hurling, R. (2008). Goal desires moderate intention-behaviour relations. *British Journal of Social Psychology*, *47*(1), 49–71. https://doi.org/10.1348/014466607X218221

R Core Team. (2022). *R: A language and environment for statistical computing*. https://www.r-project.org/

Ritchie, L., Cervone, D., & Sharpe, B. T. (2021). Goals and self-efficacy beliefs during the initial COVID-19 lockdown: A mixed methods analysis. *Frontiers in Psychology*, *11*(January), 559114. https://doi.org/10.3389/fpsyg.2020.559114

Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology*, *42*(1), 5–37. https://doi.org/10.1037/0022-3514.42.1.5

Russell, D. (1982). The causal dimension scale: A measure of how individuals perceive causes. *Journal of Personality and Social Psychology*, *42*(6), 1137–1145. https://doi.org/10.1037/0022-3514.42.6.1137

Sevincer, A. T., Mehl, P. J., & Oettingen, G. (2017). Well self-regulated people use mental contrasting. *Social Psychology*, *48*(6), 348–364. https://doi.org/10.1027/1864-9335/a000322

Sevincer, A. T., & Oettingen, G. (2013). Spontaneous mental contrasting and selective goal pursuit. *Personality and Social Psychology Bulletin*, *39*(9), 1240–1254. https://doi.org/10.1177/0146167213492428

Shamblaw, A. L., Rumas, R. L., & Best, M. W. (2021). Coping during the COVID-19 pandemic: Relations with mental health and quality of life. *Canadian Psychology/Psychologie Canadienne*, *62*(1), 92–100. https://doi.org/10.1037/cap0000263

Sharpe, D. (2015). Chi-square test is statistically significant: Now what? *Practical Assessment, Research, and Evaluation*, *20*(1). https://doi.org/10.7275/tbfa-x148

Sheeran, P., Trafimow, D., & Armitage, C. J. (2003). Predicting behaviour from perceived behavioural control: Tests of the accuracy assumption of the theory of planned behaviour. *British Journal of Social Psychology*, *42*(3), 393–410. https://doi.org/10.1348/014466603322438224

Sheldon, K. M., & Elliot, A. J. (1998). Not all personal goals are personal: Comparing autonomous and controlled reasons for goals as predictors of effort and attainment. *Personality and Social Psychology Bulletin*, *24*(5), 546–557.

Shepperd, J. A., Findley-Klein, C., Kwavnick, K. D., Walker, D., & Perez, S. (2000). Bracing for loss. *Journal of Personality and Social Psychology*, *78*(4), 620–634. https://doi.org/10.1037//0022-3514.78.4.620

Sheppes, G., Scheibe, S., Suri, G., Radu, P., Blechert, J., & Gross, J. J. (2014). Emotion regulation choice: A conceptual framework and supporting evidence. *Journal of Experimental Psychology: General*, *143*(1), 163–181. https://doi.org/10.1037/a0030831

Sobol, M., Blachnio, A., & Przepiórka, A. (2020). Time of pandemic: Temporal perspectives related to compliance with public health regulations concerning the COVID-19 pandemic. *Social Science and Medicine*, *265*(October), 113408. https://doi.org/10.1016/j.socscimed.2020.113408

Taylor, K. M., & Shepperd, J. A. (1998). Bracing for the worst: Severity, testing, and feedback timing as moderators of the optimistic bias. *Personality and Social Psychology Bulletin*, *24*(9), 915–926. https://doi.org/10.1177/0146167298249001

Taylor, S., Landry, C. A., Paluszek, M. M., Fergus, T. A., McKay, D., & Asmundson, G. J. G. (2020). Development and initial validation of the COVID stress scales. *Journal of Anxiety Disorders*, *72*(May), 102232. https://doi.org/10.1016/j.janxdis.2020.102232

Taylor, S. E., & Schneider, S. K. (1989). Coping and the simulation of events. *Social cognition*, *7*(2), 174–194. https://doi.org/10.1521/soco.1989.7.2.174

Thurber, C. A., & Weisz, J. R. (1997). Describing boys' coping with homesickness using a two-process model of control. *Anxiety, Stress, and Coping*, *10*(2), 181–202. https://doi.org/10.1080/10615809708249300

Wallston, K. A. (1992). Hocus-pocus, the focus isn't strictly on locus: Rotter's social learning theory modified for health. *Cognitive Therapy and Research*, *16*(2), 183–199. https://doi.org/10.1007/BF01173488

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, *17*(5), 1729. https://doi.org/10.1093/qjmed/hcaa110

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, *92*(4), 548–573. https://doi.org/10.1037/0033-295X.92.4.548

Wilson, T. D., & Gilbert, D. T. (2005). Knowing what to want. *Psychological Science*, *14*(3), 131–134.

World Health Organization. (2021). *COVID-19 weekly epidemiological update 46*. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20210629_weekly_epi_update_46.pdf

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*, *29*(12), 1494–1508. https://doi.org/10.1177/0146167203256921

Yan, L., Gan, Y., Ding, X., Wu, J., & Duan, H. (2021). The relationship between perceived stress and emotional distress during the COVID-19 outbreak: Effects of boredom proneness and coping style. *Journal of Anxiety Disorders*, *77*(2020), 102328. https://doi.org/10.1016/j.janxdis.2020.102328

Zacher, H., & Rudolph, C. W. (2021). Individual differences and changes in subjective wellbeing during the early stages of the COVID-19 pandemic. *American Psychologist*, *76*(1), 50–62. https://doi.org/10.1037/amp0000702

How to cite this article: Clayton McClure, J. H., & Cole, S. N. (2022). Controllability is key: Goal pursuit during COVID-19 and insights for theories of self-regulation. *Journal of Applied Social Psychology*, 1–15. https://doi.org/10.1111/jasp.12920

APPENDIX: EXAMPLE CODING OF GOAL ELABORATIONS FOR COVID-RELATED/COVID-UNRELATED PERSONAL GOALS

Goal type	Goal title	Elaboration	Coded elaboration (desired future = D, present reality = P)	No. of statements	SRT mode classification
COVID-Related	Being able to see loved ones again	My girlfriend is a student in Paris and we are currently not able to see each other. I have not been able to see my parents since the lockdown started because they are both elderly and there is a risk that they could get infected with covid-19 if I visited them.	My girlfriend is a student in Paris [P] and we are currently not able to see each other. [P] I have not been able to see my parents since the lockdown started [P] because they are both elderly [P] and there is a risk that they could get infected with covid-19 [P] if I visited them. [P]	6	Dwelling
COVID-Related	Staying well	I want to remain well. I don't want to infect other people. I want to get back some normality in my life. I want to be able to see my friends and family.	I want to remain well. [D] I don't want to infect other people. [D] I want to get back some normality in my life. [D] I want to be able to see my friends and family. [D]	4	Indulging
COVID-Related	Maintain my tennis trainings despite courts being closed	It's really important to me to be ready and in peak form to play my best when the pandemic is over but it's hard to train without the possibility to go on the tennis court and to meet with others.	It's really important to me to be ready [D] and in peak form to play my best [D] when the pandemic is over [D] but it's hard to train without the possibility [P] to go on the tennis court [P] and to meet with others. [P]	6	Mental Contrasting
COVID-Related	Maintain a good sleep schedule	the change in my regular schedule e.g., commute and work hours, has made it hard to keep to my regular sleep schedule. I want to get back into good habits, not staying up too late and making sure to get 8 h of sleep and be up at a reasonable time in the mornings instead of sleeping in	the change in my regular schedule [P] e.g., commute and work hours, [P] has made it hard to keep to my regular sleep schedule. [P] I want to get back into good habits, [D] not staying up too late [D] and making sure to get 8 h of sleep [D] and be up at a reasonable time in the mornings [D] instead of sleeping in [D]	8	Reverse contrasting
COVID-Unrelated	Starting my career after graduating in December	After graduating from a masters degree in December, I have failed to secure any professional employment. I am becoming increasingly anxious about how I will be able to begin my career. I feel like I am behind peers who did not complete a postgraduate degree who have been working professionally for a couple of years.	After graduating from a masters degree in December, [P] I have failed to secure any professional employment. [P] I am becoming increasingly anxious [P] about how I will be able to begin my career. [P] I feel like I am behind peers [P] who did not complete a postgraduate degree [P] who have been working professionally for a couple of years. [P]	7	Dwelling
COVID-Unrelated	Pass Uni first year	Pass all of my modules for first year with passing grade. Conduct more research and leanr how to havard reference properly. Write all of my reports up with lots of detail.	Pass all of my modules for first year with passing grade. [D] Conduct more research [D] and learn how to Harvard reference properly. [D] Write all of my reports up with lots of detail. [D]	4	Indulging
COVID-Unrelated	Reading often	I think reading will be very important to stimulate my mind and become more intelligent. It is also very relaxing but the problem is I don't have the motivation when it's so much easier to just go on my phone or laptop.	I think reading will be very important [D] to stimulate my mind [D] and become more intelligent. [D] It is also very relaxing [D] but the problem is I don't have the motivation [P] when it's so much easier to just go on my phone or laptop. [P]	6	Mental contrasting
COVID-Unrelated	Exercise more	Unable to exercise much at home and would be great to go to the gym	Unable to exercise much at home [P] and would be great to go to the gym [D]	2	Reverse contrasting